Workflows to integrate new devices

Wajid Ehsan on behalf of Control Instrument integration group

Outline

* Overview of existing Devices

* Workflows to integrate new Hardware devices

* Control Contribution Scheme

Overview of Integrated Control devices:

* Instrument Control Integration provides centralized control system integration for a wide range of devices to the facility
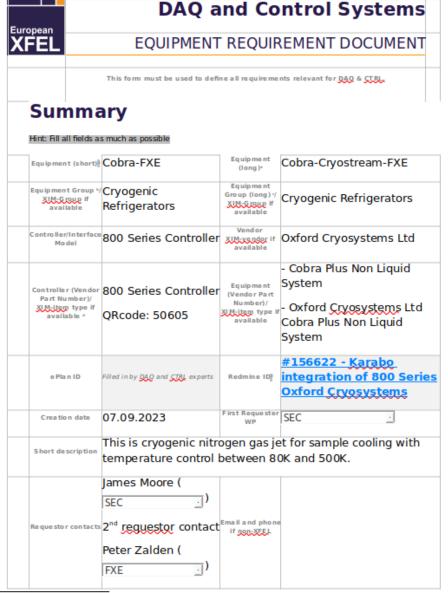
X-ray Detectors
PSI Gotthard (v1, 1D, strip), v2
PSI Jungfrau (single cell, multi cell)
LCLS/SLAC EPICS 100a (10k)
pnCCD
fastCCD
LPD
AGIPD 1.1, AGIPD 1.X
DSSC
Amptek FastSDD
Timepix 3 (in progress)

Cameras
Basler (multiple models) via Lima, GeniCam, Aravis
Photonic Science (multiple models)
PI MTE, via picam
Andor (Newton, Zyla, Ikon), via IPC solution
Varex
Shimadzu HPvx

Chillers and thermo controllers
Huber
K2
Keithley (various models)
Lakeshore
Thorlabs (various models)
Julabo

Spectrometers Scopes ...
Oceanoptics (various models)
GENTEC
Techtronix (various models)
LeCroy
SRS DG645
Microvision RGA
MCS Beam Stab.

Digitizers (uTCA-based)
SP devices ADQ 412
SP devices ADQ 7
SP devices ADQ 14

Bridge technologies
SCPI
DOOCS integration
EPICS (work in progress)
TINE

Motion Systems
Hexapod
Smaract
Elmo
Nanocube
Technosoft

Pumps and Vacuum Components
Agilant Ion Pumps
Pfeiffer (various models)
Pfeiffer Maxigauge
Adixen (various models)

Power supplys and multimeters
Wiener MPOD
Keithley (various models)
Agilant

Workflows to integrate new hardware devices:

* The group requesting the integration is to contact DATA groups, usually contacting either EEE or CTRL:

* The DATA groups will provide input on already integrated alternatives, if any.

* In case similar, previously integrated alternatives exist, a determination shall be made why these cannot be used.

* For new Integration, requestor need to provide the Equpiment Integration Request (EIR), a new introduced webform tool, to specify the details about the request and mentioning the required features

* The DATA groups together with the requestor determine the timeline of the integration.

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DAQ and Control Systems

EQUIPMENT REQUIREMENT DOCUMENT

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This form must be used to define all requirements relevant for DAQ & CTRL

Summary

Hint: Fill all fields as much as possible

Equipment (short)	Cobra-FXE	Equipment (long)	Cobra-Cryostream-FXE
Equipment Group / XUM-Group if available	Cryogenic Refrigerators	Equipment Group (long) / XUM-Group if available	Cryogenic Refrigerators
Controller/Interface Model	800 Series Controller	Vendor XUM-vendor if available	Oxford Cryosystems Ltd
Controller (Vendor Part Number)/ XUM-item type if available	800 Series Controller QRcode: 50605	Equipment (Vendor Part Number)/ XUM-item type if available	- Cobra Plus Non Liquid System - Oxford Cryosystems Ltd Cobra Plus Non Liquid System
e Plan ID	Filled in by DAQ and CTRL experts	Redmine ID	#156622 - Karabo integration of 800 Series Oxford Cryosystems
Creation date	07.09.2023	First Requester WP	SEC
Short description	This is cryogenic nitrogen gas jet for sample cooling with temperature control between 80K and 500K.		
Requestor contacts	James Moore (SEC)	2nd requestor contact	Email and phone if non-XFEL
	Peter Zalden (FXE)		

1, a,b,c,d To be validated by ERD-pickup person

2 In the best of cases, there should be only 1 task ID

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Control Contribution Scheme

* The "Control Contribution Scheme" was introduced to facilitate Karabo device development outside the DATA department (frequently by the instruments)

* The contributor(s) requests with CTRL to participate in this contribution scheme

* The CTRL contact sets up infrastructure for the project

* Contributors develop their project

* Upon project stabilization, contributors can opt to transfer ownership to CTRL

* A timeline for the transition is agreed upon by CTRL and the author

* CTRL mandates a review, and contributors are responsible for constructive participation and addressing reviewer requests. Only after a successful review can the device be supported by CTRL.

* Our current policy for this is at: https://rtd.xfel.eu/docs/karabo-device-contribution-policy/en/latest/

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